



# NOAA's Climate Services Portal

**An overview for NOAA's ClimateWatch Editorial Workshop**

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June 1, 2009



# ClimateWatch Editorial Workshop

## Day 1 Goals & Objectives

### **DAY 1 GOAL:**

- To establish NOAA's Climate Services Portal as central to the agency's communications, engagement and extension strategy

### **DAY 1 OBJECTIVES:**

- To update participants on the Portal's development, and milestones, and to seek input and ideas to help guide its evolution from here
- To discuss lessons learned from a comparable effort done at NASA— Portal as both an end and a means
- Begin process of forging virtual teams to produce content for publication via the Portal on an ongoing basis
- To discuss the processes and pathways by which we will work together, working across Line Offices as well as with our Partners
- To hear from a key partner — ASTC — an update on the C3 Project



# ClimateWatch Editorial Workshop

## Day 2 Goals & Objectives

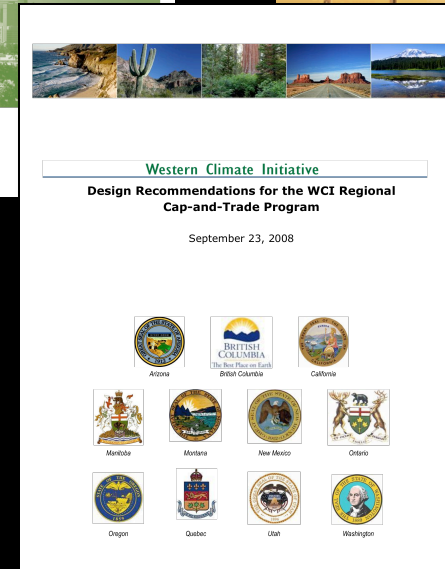
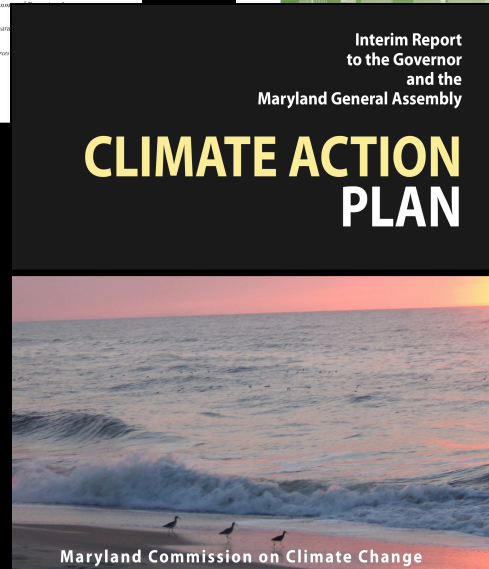
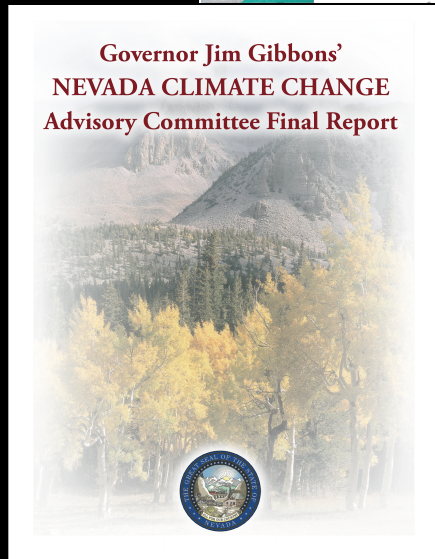
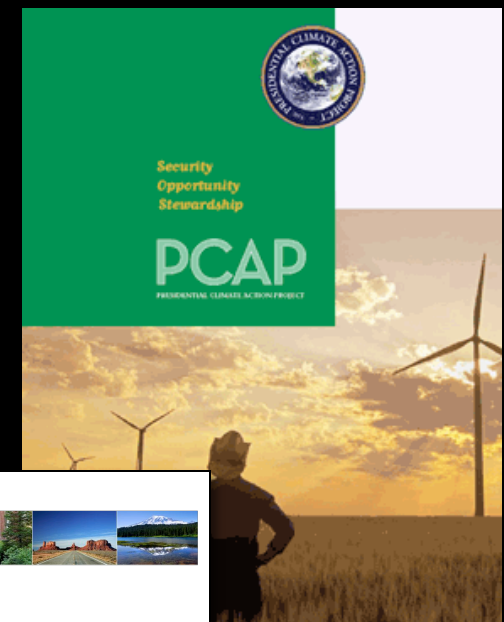
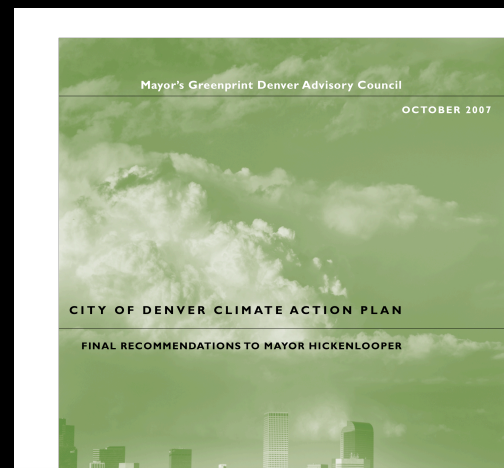
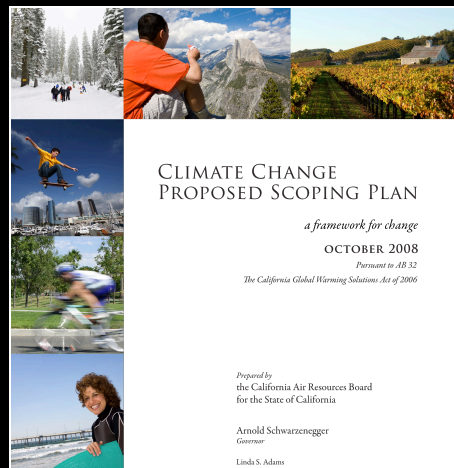
### **DAY 2 GOAL:**

- To define what is and isn't a good story and to allow time for discussion and interaction surrounding how best to tell climate-related stories

### **DAY 2 OBJECTIVES:**

- To allow time for participants to begin turning their story ideas into working outlines for future development
- To hear a story from a tribal partner — Dan Wildcat — on utilizing native wisdom with modern science to improve climate resilience
- A presentation on techniques for enhanced storytelling through compelling data visualizations and imagery
- Facilitated interactions for group storyboarding of a select number of our story ideas

# City and state governments developing climate action plans need ready resources



# NOAA Climate Portal Charter

## **GOAL:**

- To develop a one-stop Web portal for discovery and delivery of NOAA's climate information and resources.

## **OBJECTIVES:**

- Enhance the discoverability, accessibility and usability of NOAA climate data, products, and services
- Enhance interoperability and leveraging of software products
- Implement appropriate metadata standards and requirements for climate data and products
- Promote a user-focused view of climate data and a consistent delivery of Web-based climate services across NOAA

# NOAA Climate Portal Charter

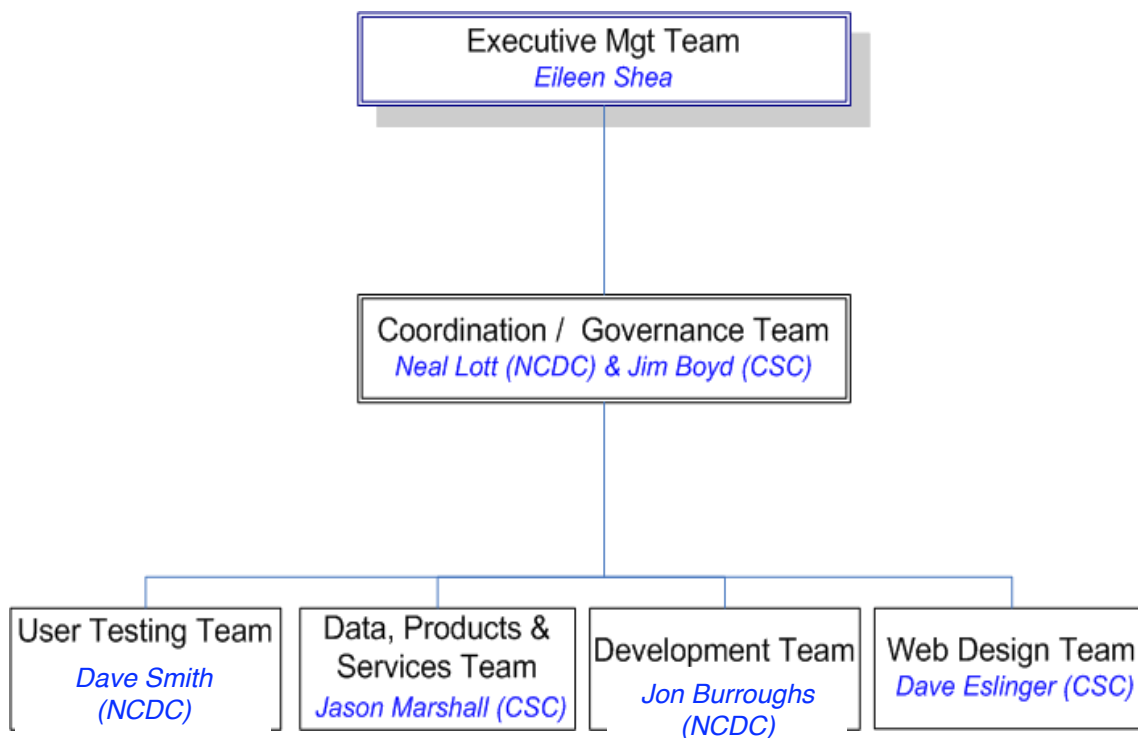
## VISION

- In the climate context, NOAA's role is to be an **authoritative** and **credible** source of climate data and services for science and society, and an **honest broker** in its assessments of the state of the climate system and forecasts of its future.
- To succeed in this vision, NOAA's supporting labs, centers, and partners must work collaboratively and the Portal will serve as a primary, unifying focal point.
  - Existing Web interfaces across NOAA will continue to evolve in concert with the Climate Portal, with increasing seamlessness.
  - We **do not** plan one massive, centralized Website to host and serve all datasets and products; not practical nor doable.
  - Rather, think **centralized access** for users, **decentralized process** among NOAA personnel for developing & serving products & services.



# Program Management

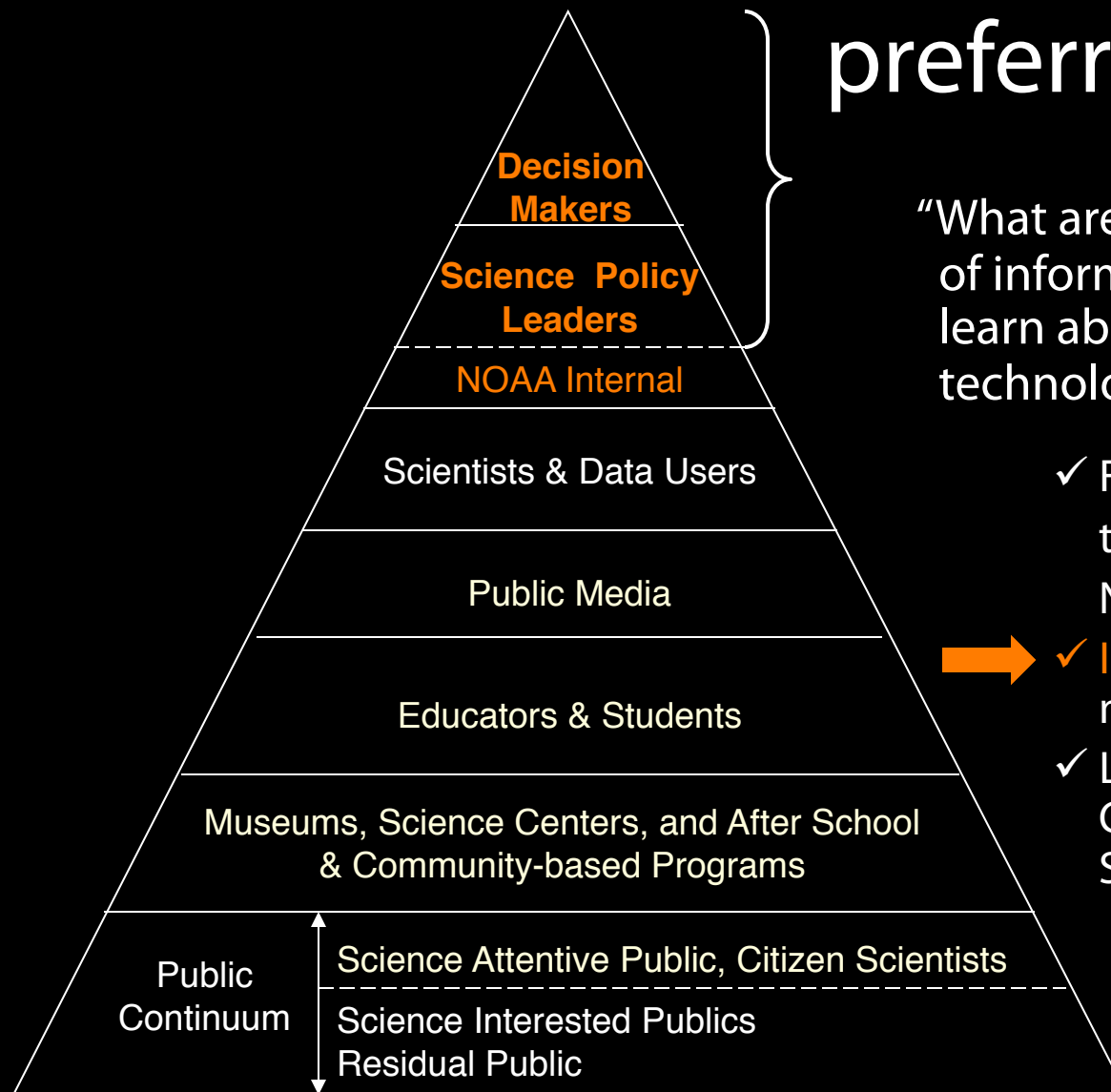
## Project Organization



## Roles & Responsibilities

- Executive sponsorship
- Establish direction & priorities
- Approves requirements
- Oversees technical development
- Manages cost, schedule & scope
- Resolves cross-cutting issues
- Provides routine status to Exec Team & elevates issues as needed
- Executes WBS (work breakdown structure) tasking
- Provides cross-walk with other teams as needed

# My findings on preferred sources\*

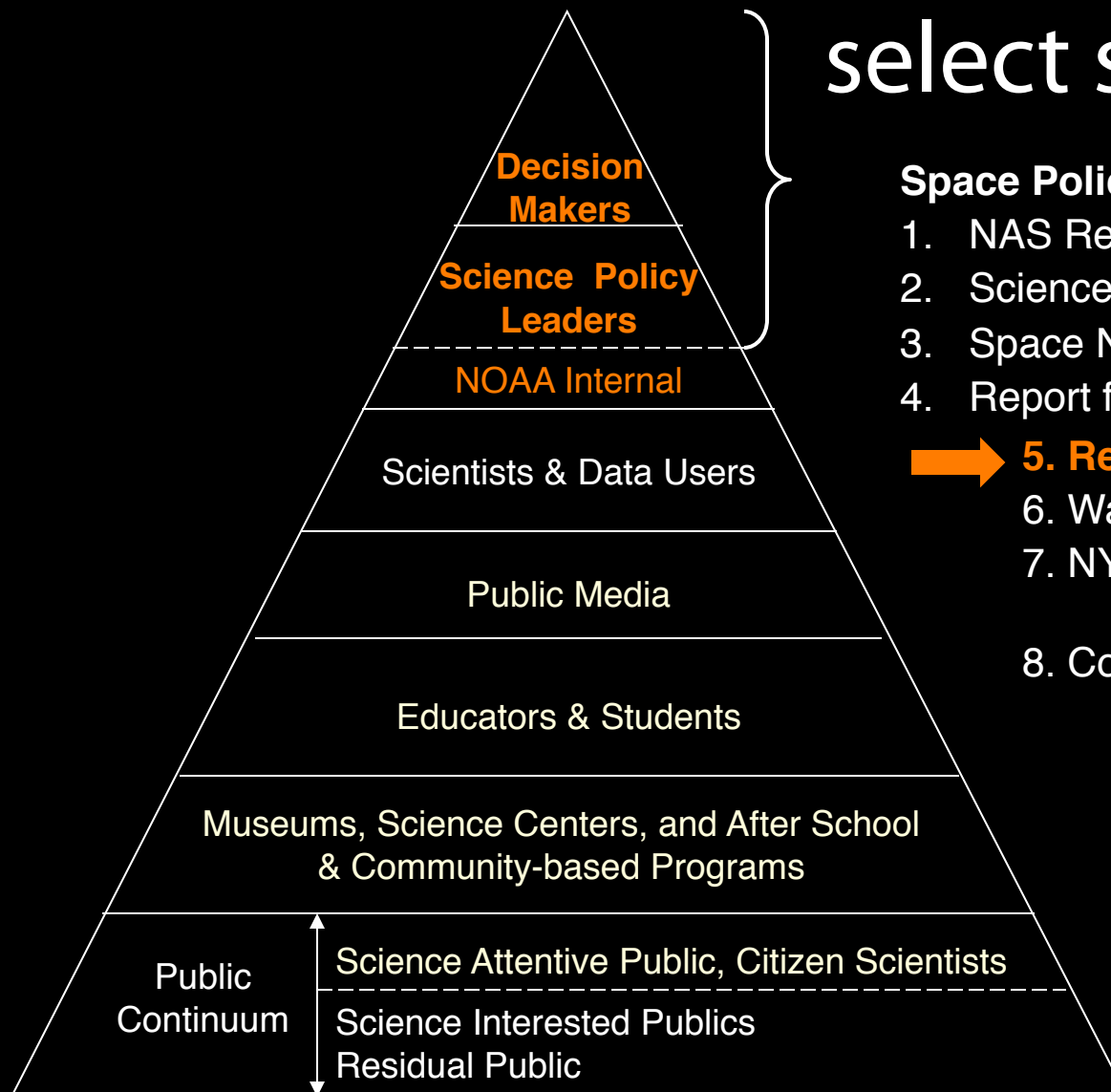


"What are your primary source(s) of information when you need to learn about a given science or technology subject?"

- ✓ Firsthand personal briefings, typically requested through NASA Leg Affairs
- ➔ ✓ **Internet sources** (Google cited most often)
- ✓ Library of Congress' Congressional Research Services

\*Herring, D. (2007 & 2008): Personal dialogues with staffers. Rayburn Building lobby & visit to SVS for presentation.

# Confidence in select sources\*



## Space Policy / Science Policy:

1. NAS Report = 8.3 / 8.7
2. Science or Nature = 7.9 / 8.3
3. Space News or Aviation Week = 7.1 / --
4. Report from major university = 7.0 / 7.4

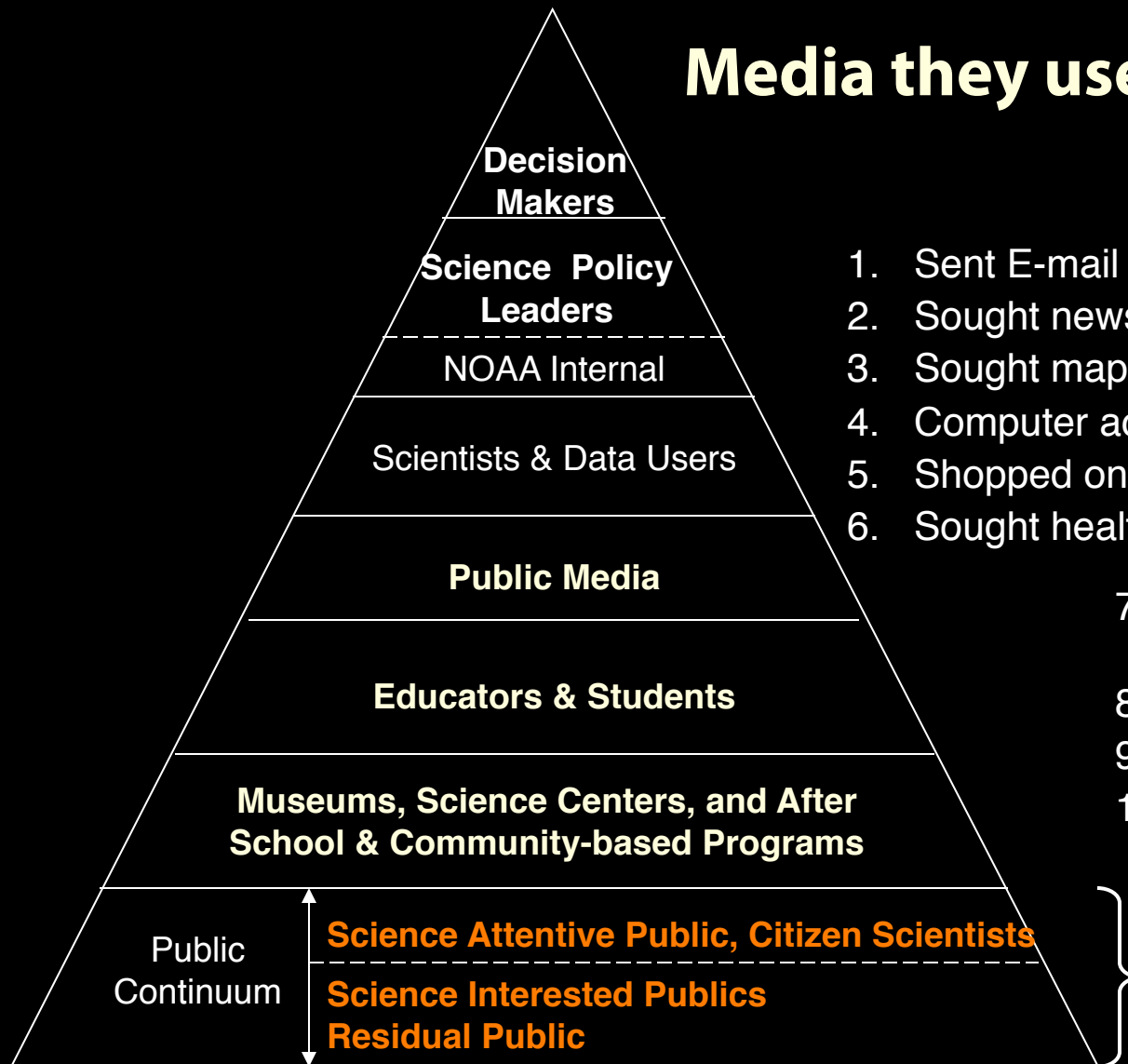
### ➔ 5. Report from NOAA = 6.9 / 6.6

6. Wall Street Journal = 6.6 / 6.1
7. NY Times or Wash. Post = 6.4 / 6.4
8. Congress cmte on sci & tech = 6.0 / 6.1
9. Report from Planetary Society = 6.0 / --
10. Report from DoD = -- / 5.1
- 11-13. Time, Newsweek, CNN, network TV news.

\*Miller, J.D. (2004): "Space Policy and Science Policy Leaders in the United States." A white paper presented to NASA Headquarters; on-line at

# The Public Continuum\*

## Media they use, and how

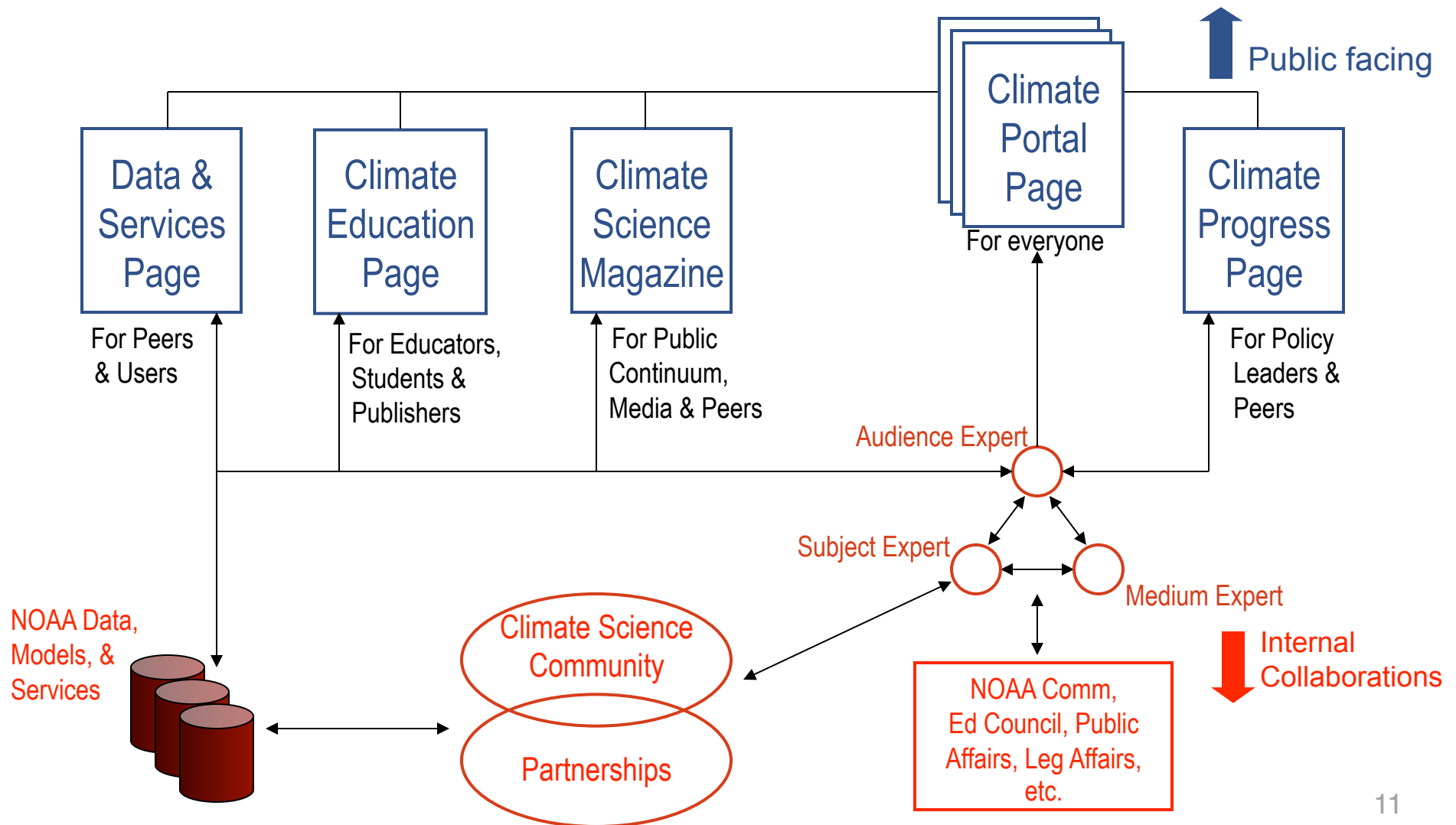


1. Sent E-mail = 85%
2. Sought news on the Web = 72%
3. Sought maps, weather on Web = 70%
4. Computer access at work/home = 64%
5. Shopped on the Web = 63%
6. Sought health info on Web = 63%
7. Watched TV news 3+ days per week = 62%
8. Visited a Science Ctr = 58%
9. Printed info off Web = 57%
10. Reads print newspaper 1+/- week = 53%



# Climate Portal Concept

Centralized Access, Decentralized Process





# NOAA CLIMATE SERVICES

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## CLIMATE WHERE AND WHEN

City, ST or ZIP Code

mm/dd/yyyy

Lookup



## Monitoring the Ocean's Carbon Balance

The idea seemed simple enough: the more carbon dioxide that people pumped into the atmosphere by burning fossil fuels, the more the oceans would absorb. Is the ocean's uptake of carbon changing its carbon cycle? After 30 years of observations, NOAA scientists found a surprising answer. [Read more...](#)

## NEWS & FEATURES

### » A Warm Summer for the United States

Temperatures from August to June 2008 were the 22nd warmest on record for the contiguous U.S. [Read more...](#)

### » Local Pollution Potentially Plays a Role in Climate Change

Pollutants that stay in the air for days or weeks have a greater influence on climate than previously thought. [Read more...](#)

### » Climate Change Brings More Extreme Weather to High Plains?

The summer of 2008 shattered all previous records for the number of days exceeding 100°F in the central U.S. [Read more...](#)

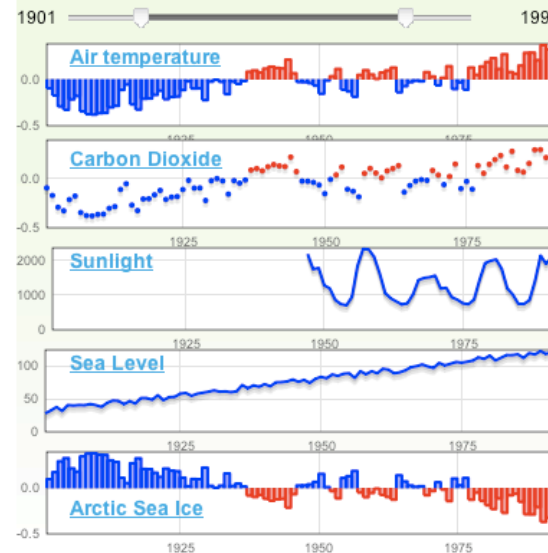
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## NOAA CLIMATE SERVICES

We assess Earth's past and present climate, and forecast its future to help citizens make informed decisions in their lives and livelihoods

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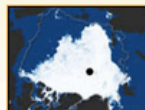
## GLOBAL CLIMATE DASHBOARD



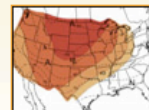
## CLIMATE OUTLOOKS & MONITORING



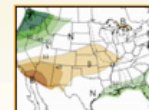
Drought Monitor



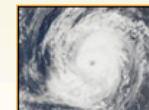
Arctic Report Card



Temperature



Precipitation



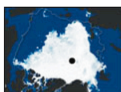
Hurricane Outlook



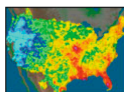


## Climate Outlooks & Monitoring

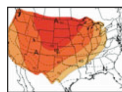
Arctic Report Card



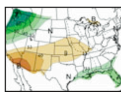
Drought Monitor



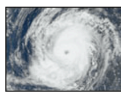
Temperature



Precipitation



Hurricane Outlook



## Communities & Sectors

Agriculture



Energy



Insurance



Outlooks &amp; Monitoring

Communities &amp; Sectors

States &amp; Regions

Reports &amp; Assessments

## Climate Conversations

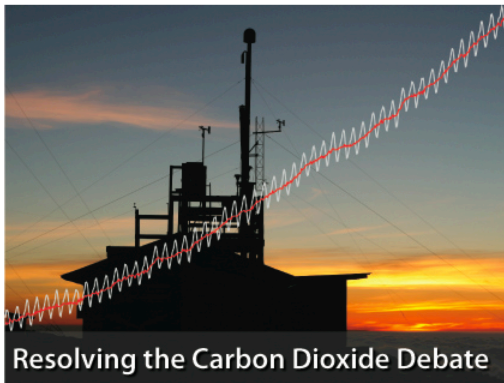


### ► What is causing global climate to change?

Marika Holland, of NOAA, and other climate scientists explain the primary cause of climate change, and the evidence that supports their conclusion. [Watch movie...](#)

[View All Climate Conversations...](#)

## ClimateWatch Magazine



### Resolving the Carbon Dioxide Debate

Fifty years ago scientists debated whether human-emitted carbon dioxide ended up in the atmosphere or was absorbed by the ocean. Charles Keeling resolved the debate when he began measuring carbon dioxide at Mauna Loa Observatory in 1958. He observed a gradually accelerating rise in carbon dioxide concentration. [Read more...](#)

### ► Ice-Free Arctic Summers Likely Sooner Than Expected

Summers in the Arctic may be ice-free in as few as 30 years, not at the end of the century as previously expected. [Read more...](#)

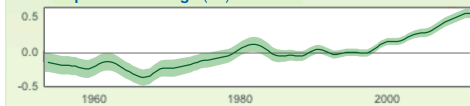
### ► Major Midwest Flooding Highlighted in U.S. Spring Outlook

## Global Climate Dashboard

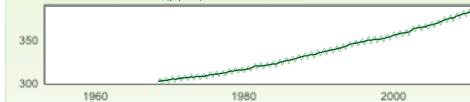
Climate Change

Climate Variability

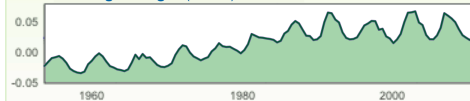
### Temperature Change (°C)



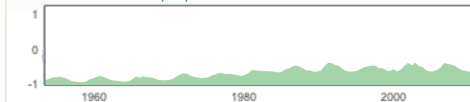
### Carbon Dioxide (ppm)



### Incoming Sunlight (W/m²)



### Sea Level Rise (cm)



### Arctic Sea Ice (km²)


[View advanced data search options...](#)

## Climate WHERE & WHEN?

City, State, or Nation OR Lat-Lon

Enter date - YYYYMMDD

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Results for: Asheville, North Carolina



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## Related Links

[» Global Temperature Anomalies](#)
[» Climate of 2009](#)
[» History of Global Temp Analysis](#)

## Data Sources

[» FTP access to the monthly data.](#)

## Additional Reading

[» Journal of Climate article describing the data used here \(Smith, and Reynolds, 2005\).](#)
[» Elusive Global Temperature](#)
[» NCDC Global Temperature Anomalies](#)

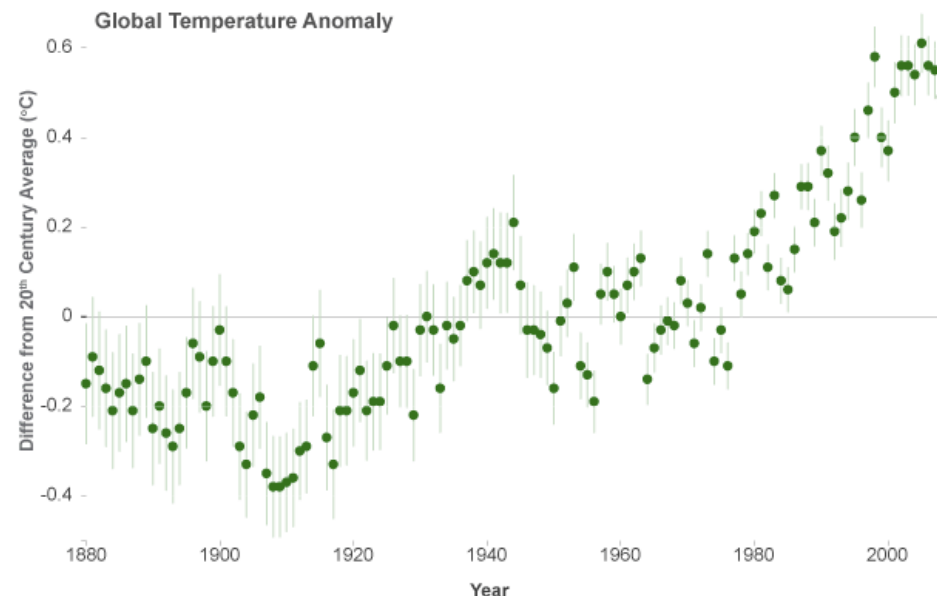
## Global Temperature

Temperatures measured on land and at sea for more than a century show that Earth's globally averaged surface temperature is experiencing a long-term warming trend.

The concept of an average temperature for the entire globe may seem odd. After all, at this very moment, the highest and lowest temperatures on Earth are likely more than 55°C (100°F) apart. Temperatures vary from night to day and between seasonal extremes in the Northern and Southern Hemispheres. This means that some parts of Earth are quite cold while other parts are downright hot. To speak of the "average" temperature then may seem like nonsense. However, the *concept of a global average temperature* is convenient for detecting and tracking changes in Earth's condition over time.

## Dashboard Details

Global average temperature change (from the 1901-2000 average temperature. Negative values are shown in red, positive in blue.



To calculate a global average temperature, scientists begin with temperature measurements taken at locations around the globe. Because their goal is to track *changes* in temperature, measurements are converted from direct temperature readings to temperature anomalies—values that represent the difference between the observed temperature and the long-term average temperature for each location and date. Across inaccessible areas that have few measurements, scientists use surrounding temperatures and other information to fill in the missing values. Each value is then used to calculate a global temperature average. This process provides a consistent, reliable method for monitoring Earth's surface temperature over time.

This graph shows global average surface temperatures (°C) compared with the long-term average for 1901-2000. The zero line represents the long-term average temperature; dots show departures from that mean for each year. Thin lines extending from the dots show the margin of error. To produce this temperature record, NOAA's National Climatic Data Center processes temperature measurements from land stations, buoys, ships, and satellites.

Though warming has not been uniform across the planet, the upward trend in the globally averaged temperature shows that more areas are warming than cooling. From 1900



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- [Item 2](#)
- [Item 3](#)

## Climate Data and Service Finder (advanced)


### Filter by Location

☐ Any Location

☒ Select by Map:

☒ Intersects with selection ☐ Fully within selection

Search for a station, city or location name  [Lookup](#)



Map data ©2009 Tele Atlas - [Terms of Use](#)

-99.7119140625, 31.840232667909362 to -68.9501953125, 43.929549935614595

### Filter by Date/Time

☐ Any Time

☒ Specific Time:

Start Date  ... (yyy-mm-dd)

End Date  ... (yyy-mm-dd)

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☐ All Types

☒ Selected Types Only:

- ☐ Agriculture and Farming
- ☐ Biology and Ecology

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types of Searches

- >> SECART
- >> Item 2
- >> Item 3

☒ Any Time  
☐ Specific Time:

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☒ All Types  
☐ Selected Types Only:

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Keyword

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Search Results: Showing 1 to 5 (of 19) [Close \(x\)](#)

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 **Climate Prediction Center Three-Month Outlooks**


The Climate Prediction Center (CPC) issues a series of thirteen probabilistic three-month temperature and precipitation outlooks. These outlooks provide information to decision makers in weather and climate sensitive activities sensitive to seasonal and ...

[Website](#) [Details](#) [Metadata](#)

 **Climate Prediction Center One-Month Outlooks**


The Climate Prediction Center (CPC) issues a set of probabilistic one-month temperature and precipitation outlooks twice a month. These outlooks provide information to decision makers in weather and climate sensitive activities sensitive to inter-seasona...

[Website](#) [Details](#) [Metadata](#)

 **Local Climatological Data - LCD (DSI-3715)**


Local Climatological Data is a historical digital data set archived at the National Climatic Data Center (NCDC). The local climatological data annual file is produced from National Weather Service (NWS) first and second order stations. These data are c...

[Add To Map](#) [Details](#) [Metadata](#)

 **Global Merged Land Air Sea Surface Temperature Reconstruction**

NCDC's long-term mean temperatures for the Earth were calculated by processing data from thousands of world-wide observation sites on land and sea for the entire period of record of the data. Many parts of the globe are inaccessible and therefore have no ...

[Website](#) [Details](#) [Metadata](#)

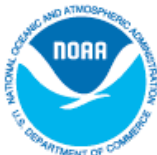
 **Snow Cover for 10 Day Period**

Snow cover is estimated from the latest 24-hours of surface observations for each reporting WMO station. Snow depth reports are updated by additional snowfall data or decreased by calculated snow melt. If no new snow depth or accumulation information is a...

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Done

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NOAA Climate Portal >> ClimateWatch Magazine

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**Severe Drought Hits Western United States**

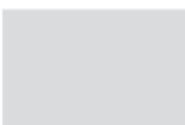
12-Dec-2008

Full resolution: [JPEG](#) | [KMZ](#) (12.4 MB)



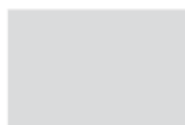
11-Dec-2008

This Header is for  
Yesterday's Image  
and Placed Here



10-Dec-2008

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Image that is Two  
Days Old Placed Here



9-Dec-2008

This Header is for the  
Image that is Three  
Days Old Placed Here

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## Feature Articles

## Most Popular

## Editors Recommend

### [NOAA Improves Historical Hurricane Tracks Dataset](#)

December 19, 2008

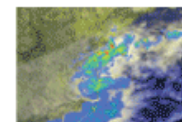
The historical hurricane track dataset now has twice the precision of the previous version, in both time and space. There can be up to four lines of text in these descriptors.



### [Climate Change Brings More Extreme Weather to Great Plains](#)

December 2, 2008

The summer of 2008 shattered all previous records for the number of days exceeding 100°F. There can be up to four lines of text in these descriptors, which is 1-2 sentences.



### [This is the Third Headline Out of Four Headlines](#)

November 21, 2008

This blurb describes the third item in this stack of recent news articles about NOAA's exciting climate research. There can be up to four lines of text in these descriptors.



[View all articles](#)

## Climate this week

## NOAA News

## Facts and FAQs

## Blogs

## Community Forums

### [NOAA Improves Historical Hurricane Tracks Dataset](#)

December 16, 2008

The historical hurricane track dataset now has twice the precision of the previous version, in both time and space. [Read more...](#)

### ▶ [U.S. Experiences Fourth-Warmest November On Record](#)

December 11, 2008

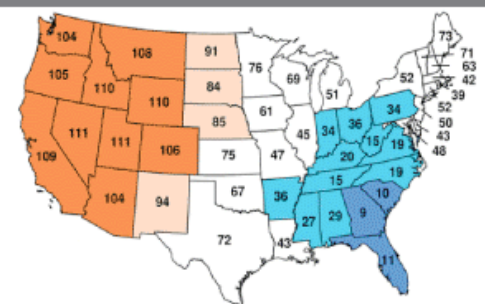
The November 2008 temperature for the contiguous United States was warmer than the long-term average. [Read more...](#)

### [This Design Features Three Headlines and this is the Third of Three](#)

December 10, 2008

This blurb describes the third item in this stack of recent news articles about NOAA's fascinating climate research. [Read more...](#)

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ClimateWatch Magazine

Climate Conversations

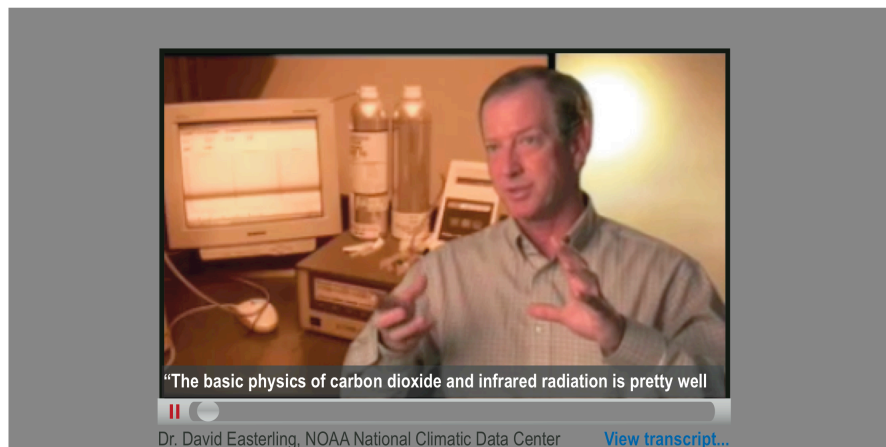
Climate Data &amp; Services

 Enter topic of interest

 YYYYMMDD-YYYYMMDD

 Enter location of interest

## Climate Conversations



Dr. David Easterling, NOAA National Climatic Data Center

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Hide all ▲

- ▶ Abbott, Anne
- ▼ Easterling, David
  - » Easterling explains the [relationship between CO<sub>2</sub> and infrared radiation](#)
  - » Easterling discusses a [climate-related topic](#)
  - » Easterling describes [some process that climate scientists use to learn about something](#)
- ▶ Holland, Marika
- ▶ Landsea, Chris
- ▶ Tans, Pieter
- ▶ Lastname, Firstname
- ▶ Lastname, Firstname
- ▶ Lastname, Firstname
- ▶ Lastname, Firstname
- ▶ Lastname, Firstname
- ▶ Lastname, Firstname
- ▶ Lastname, Firstname
- ▶ Lastname, Firstname
- ▶ Zubert, Ziegfried

## Community Climate Conversations Calendar [RSS](#)

### ▶ Community Conversation on Climate and Sea Level Rise

July 19, 2009

As mean global temperature rises, the ocean warms too. Thermal expansion of the ocean combined with loss of ice from ice sheets on Greenland and Antarctica is elevating sea levels worldwide. In the U.S., about half the population lives in coastal counties. Join NOAA scientists and local coastal resource managers in a public dialog about this rising problem, hosted by the Liberty Science Center. [Learn more...](#)

### ▶ World Ocean Day

June 8, 2009

Much of the carbon dioxide humans produce is absorbed into the ocean, slowly making its waters more acidic. Scientists are concerned that this trend could trigger a mass extinction event among shell-forming marine organisms. Dr. Richard Feely, of NOAA's Pacific Marine Environmental Lab, will give a live, interactive presentation on ocean acidification to public visitors in multiple science centers around the world. [Learn more...](#)

### ▶ Community Conversation on Climate and Water

May 9, 2009

Hosted by the Arizona Science Center in Phoenix, AZ, this event brought 30 Phoenixians together with local climate and water experts to talk about how climate impacts Arizona's water supply and ways that citizens can reduce their vulnerability to climate variability and change. [Learn more...](#)

## NOAA Climate Speakers Bureau

Would you like a NOAA climate scientist or climate services expert to speak at your event? To find out who might be available, fill in one or more of the fields below.

 Enter name

 Enter topic of interest

 Enter date - YYYYMMDD

 Enter City, State

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# Progress to date

**June '08:** Initial meeting to discuss ideas & interested players

**August '08:** Kickoff workshop in Asheville, NC, to set scope

## **September – November '08:**

- Governance, Design, Data/Metadata & User Testing Team efforts underway
- Core users identified
- Charter completed; concept presented to NOAA CIO Council
- Requirements documents development underway
- Selected for “in-core” funding beginning in FY11

## **December '08:**

- Agreement on prototype design
- Continued work on requirements documents
- Continued development of case studies and user scenarios for prototype

## **March '09:**

- Working portal prototype for internal review

# Deliverables

## **Phase 1 (FY09) Prototype:**

- Prototype internal review, March '09
  - NOAA Climate Services Portal Homepage
  - Data & Services section
  - ClimateWatch magazine
- FGDC/ISO-compliant metadata for data / products
- Technical documentation sufficient to manage and evolve the initial version of the portal into the future
- Tests designed & implemented for both internal “tire kicking” and external user feedback
- Targeting public rollout (upon approval) in September '09

## **Phase 2 (FY11, possibly sooner):**

- Expansion of each section developed in Phase 1 with added datasets, products, and services
- Development of **Education** and **Climate Progress** (for Policy) sections

# Next Steps

- User testing ... ongoing and often!
- Finalize portal requirements documents
- Stand up portal infrastructure at NCDC
- Secure FGDC metadata from participating offices for Phase 1 data / products
- Continue enhancements of functionality and content
- **Widen the “circle of engagement”** — establish virtual editorial team to begin developing / producing content for ClimateWatch Magazine (June 2009)
- On-line release to public (~ September 2009)